Castilleja

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www.uwyo.edu/wyndd/wnps/wnps_home.htm

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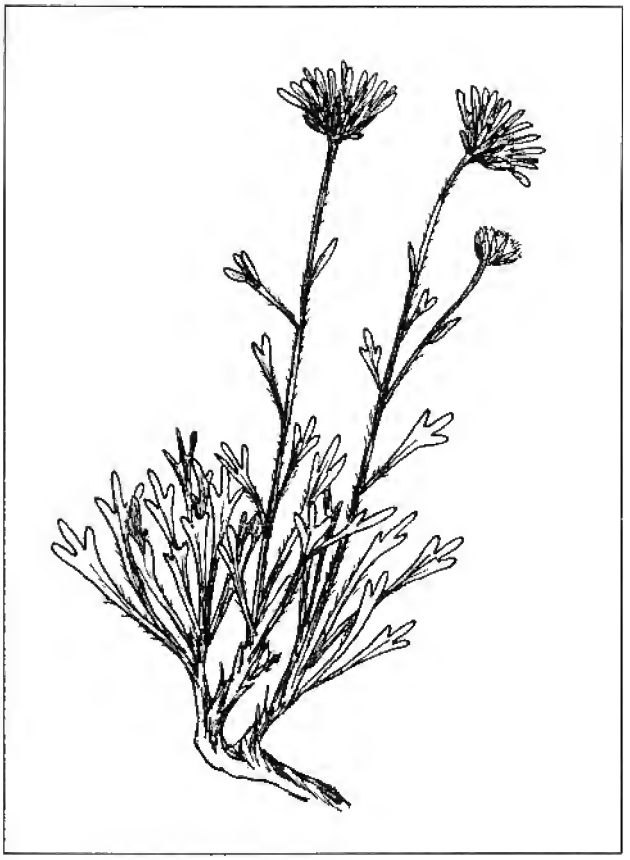
In this issue:

The Flora of the Bighorn Canyon

By Bonnie Heidel

The deep gorge of Bighorn Canyon National Recreation Area (NRA) cuts across the Wyoming – Montana state line. Its 70-mile sweep strings together landscapes of deserts, foothills, mountains, and plains along the grandest canyon of the Bighorn Basin.

Bighorn Canyon NRA was established in 1966 to promote recreational opportunities on the soon-to-be created Yellowtail Reservoir and to protect historical sites including the Mason-Lovell Ranch and Bad Pass Trail. As a unit of the National Park Service, Bighorn Canyon is also managed to conserve the common and rare native plants and animals. The first systematic inventory of the Bighorn Canyon NRA flora documented 656 vascular plant taxa (Lichvar et al. 1985), reflecting its diversity of habitats. [**continued on page 7**]



Above: Bighorn fleabane (*Erigeron allocotus)* Illustration by Walter Fertig

Erigeron allocotus is a narrow regional endemic that resembles *E. compositus,* having leaves with 3-5 lobes spreading like a fan, but with characteristic coarse pubescence and small flower heads. This species reaches its highest known numbers and extent in both Montana and Wyoming around Bighorn Canyon, where survey results provided the basis for removing it from the 2002 Wyoming plant species of special concern list.

WNPS NEWS

2002 Annual Meeting: Mark your calendars for **June 15** to explore Heart Mountain (north of Cody). This isolated mountain near the eastern Absarokas harbors *Shoshonea pulvinata* and other regional endemics. The May issue will provide the full itinerary.

We would be happy to post any other wildflower walks.

2002 Student Scholarship: A 2002 WNPS Scholarship of $500 is awarded to Elizabeth Lack (University of Wyoming) for her project "A Floristic and Sensitive Plant Inventory of Wetland and Aquatic Vascular Plant Species in Wyoming." The summer of 2002 will be the first in this three-year study, which will be conducted at sample locations throughout the state. The goal is to produce a list of species, categorized by wetland and deepwater type (according to Cowardin et al. 1979), which will be a useful guide to wetland delineators and other parties interested in accurate identification of hydrophytic species. This study is part of the ongoing Flora of the Rocky Mountains project at the Rocky Mountain Herbarium (RM). All voucher specimens will be deposited at RM. We are proud to support this research.

Reference
Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31, December. Washington, D.C.

New Members: Please welcome the following new WNPS members/subscribers: Brenda Beatty of Sedalia, Co; Joan Bennet of Sheridan, WY; Venice Beske of Hawk Springs, WY; Kate Dwire of Laramie, WY; Mike Hagebusch of Chestertown, MD; Laura Hudson of Missoula, MT; Richard and Carmel Kail of Pinedale, WY; Gregory Karow of Sheridan, WY; Juanita Ladyman of Centennial, CO; Suzanne Morstad of Basin, WY; Niobrara County Library; Pauline Placzkowski of Brighton, CO; Shannon Rochelle of Lander, WY; Jeanne Sanchez of Sheridan, WY; Sheridan County Library; Yellowstone Research Library.

Treasurer's Report: Balance as of 19 March 2002: General Fund $1256.85 (includes $478 in conference pre-registration); Student Scholarship Fund $812.50; Total funds: $2069.35.

Contributors to this issue: John Baxter (JB), Robert Dorn (RD), Walter Fertig (WF), Bonnie Heidel (BH), Emily Holt (EH), Stuart Markow (SM), Isobel Nichols (IN), and Justin Whittall (JW). The next deadline for newsletter submissions, including wildflower walk announcements and Board nominations, is 29 April 2002.

Wyoming Native Plant Society
PO Box 3452, Laramie, WY 82071

Reminder: The May Newsletter will have election ballots plus the annual renewal reminder. It's not too late to nominate candidates for President, Vice-president, Secretary-Treasurer, and Board-member-at-large.

Botany Briefs

New crops from natives Elk Mountain Herbs of Laramie and the University of Wyoming are teaming up as recipients of a USDA Small Business Innovative Research Grant to cultivate Osha (*Ligusticum porteri*), a medicinal plant. One pound of Osha root collected in the wild can run $25-$30 wholesale. "The species is declining in the wild and it is hard to germinate," explains Karin Guernsey, co-founder of Elk Mountain Herbs. She noted that the level of market demand and effects of over-collecting put it at risk according to United Plant Savers. Therefore, propagation potentially offers a new enterprise that takes the pressure off of populations in the wild. Osha is commonly used for the treatment of viral infection and respiratory ailments, and is in particularly high demand in the southwest as well as in the United Kingdom. BH
Reference: Company takes on research project, *Casper Star-Tribune*, 13 January 2002.

Desert yellowhead listed as threatened under ESA The Desert yellowhead (*Yermo xanthocephalus*) was listed as threatened by the U.S. Fish and Wildlife Service under the Endangered Species Act on 14 March 2002 [FR 67(50): 11442-11449.] Watch for more information in the May issue. BH

Did you know? In the USA, 25% of all prescriptions from community pharmacies between 1959 and 1980 contained materials from higher plants. This does not include all of the synthesized copies of chemicals found naturally in plants (From http://www.plant-talk.org/).

Dismemberment of *Arabis*

By Robert Dorn

(Editor's Note: The *Arabis* genus is significantly changed by Robert Dorn in the current state flora; *see* "Changing Times, Changing Floras," Castilleja 20(4). The "New World rockcress" species of Wyoming are now in a separate *Boechera* genus, leaving only 2 species of Eurasian affinity in the *Arabis* genus, distinguished by their erect fruits 3-6 cm long, single row of seeds, and hairy lower stems. Dorn cites the supporting research in this article. Look for more taxonomic counseling services in future issues.)

In a 1975 paper, Áskell and Doris Löve noted that most American *Arabis* had a base chromosome number of x = 7 while European *Arabis* had x = 8. Accordingly, they described a new genus, *Boechera*, for the American plants. Hardly anyone except Bill Weber at the University of Colorado followed their lead, and Reed Rollins, the *Arabis* expert at Harvard, was vehemently opposed to the breakup. This past year Koch, Haubold, and Mitchell-Olds published molecular data strongly supporting the Löve's postulate. Using nucleotide sequence variation of two genes, they found that five American species of *Arabis* (x = 7) were very different from six European or x = 8 species. In both a strict concensus tree and a neighbor-joining distance tree, the two groups were widely separated with numerous genera between them including *Thlaspi, Sinapis, Raphanus, Sisymbrium, Barbarea, Rorippa, Cardamine, Lepidium, Arabidopsis,* and *Capsella*. They concluded that, "Several major clades can be recognized in both data sets: ...(5) North American *Arabis* (these taxa should be united under the genus *Boechera*...)."

A little over half of the American species of *Arabis* have had their chromosomes counted. Most are x = 7, but there are about a dozen species that are x = 8. In looking at the distributions of the x = 8 species, they are either partly in Eurasia with a very wide distribution or they are restricted to Canada and Greenland or the Pacific coast with one variety (which should probably be treated as a species) coming as far inland as western Montana (still under Pacific influence). All of these x = 8 species have erect to ascending fruits (rarely spreading). Some of the x = 7 species also have erect to ascending fruits. There seems to be no one morphological characteristic that will separate the two groups. Only two of our species have not had their chromosomes counted, *B. nuttallii* and *B. pusilla*. The latter easily fits into the x = 7 group, but the former is uncertain as to which group it should belong. Its distribution suggests the x = 7 group.

With the strong molecular data now available and with only one of our species uncertain as to its placement, I went ahead with splitting *Boechera* from *Arabis* in the recently completed 3rd edition of Vascular Plants of Wyoming. We are left with only two species in *Arabis* with the rest in *Boechera*. In places like California where both x = 7 and x = 8 groups are well represented, and many species have not had their chromosomes counted, it may be some time before a comprehensive treatment can be provided. Here is a nice project for someone inclined to molecular or chromosome studies.

All but two of our species retain their specific epithets when transferred to *Boechera*. The two exceptions are *Arabis confinis* and *A. drummondii*. *Arabis confinis*, described by Sereno Watson in 1887, is the same as *Turritis brachycarpa* described by John Torrey and Asa Gray in 1838. This older name cannot be used in *Arabis* because a transfer was not made before Franz Ruprecht described another species as *Arabis brachycarpa* in 1869. There is no obstacle to using the name in *Boechera* so the species becomes *Boechera brachycarpa* based on the older name. *Arabis drummondii*, described by Asa Gray in 1866, is the same as *Streptanthus angustifolius* described by Thomas Nuttall in 1838. This older name cannot be used in *Arabis* because there is a different species called *Arabis angustifolia* described by Jean Lamarck in 1783. There is no obstacle to using the name in *Boechera* so the species becomes *Boechera angustifolia* based on the older *Streptanthus angustifolius*. One other species has a different specific epithet. *Arabis pendulocarpa*, described by Aven Nelson in 1900, becomes the same as *Arabis exilis*, also described by Aven Nelson in 1899, due to a lectotype being designated by Jerry Mulligan in 1995. The older *A. exilis* then becomes the base for *Boechera exilis*.

References

Koch, M. et al. 2001. Molecular systematics of the Brassicaceae: evidence from coding plastidic *MATK* and nuclear *CHS* sequences. Amer. J. Bot. 88:534-544.

Löve, Á. and D. Löve. 1975. Nomenclatural notes on arctic plants. Bot. Notiser 128:497-523.

Rollins, R. C. 1993. The Cruciferae of continental North America. Stanford Univ. Press. 976 pp.

"I will admit that taxonomic systems are neither adequate nor infallible, but has any field of botany become static by reason of its complete development? Is not the fact that they are changing the best evidence of life in them? Even so with taxonomy."

By: Aven Nelson, 1929. The Dual Purpose Manual, Proceedings of the International Congress of Plant Sciences 2: 1532-1538. *As cited in*: Williams, R.L. 1984. Aven Nelson of Wyoming. Colorado Associated University Press, Boulder.

Botanist's Bookshelf

Lichens of North America,

by I.M. Brodo, S.D. Sharnoff, and S. Sharnoff. Yale University Press, 2001.

by Emily Holt

As I have shared my growing interest of lichenology with friends and family, I am most often confronted with the question: What is a lichen? Botanists and naturalists alike often recognize the green hair-like structures pendant on branches in old growth forests or the brilliant oranges and yellows that clothe rocks throughout Wyoming. However, many do not comprehend what these organisms are or the role they play in a variety of ecosystems worldwide.

Lichens of North America addresses these questions and many more. The book begins with a preface written by the primary author, Irwin Brodo. He begins by asking his colleagues, Steve and Sylvia Sharnoff, "Would it be possible to prepare an up-to-date, illustrated guidebook to the lichens of North America thorough enough to make it truly useful, and yet not so technical as to make the book frustrating to novices?" After reading and using this book, I believe the answer is "yes, it would," and they have.

The first portion of the book is dedicated to descriptions of lichen morphology, biology, chemistry, distribution, and ecological and practical roles. Although quite informative, this background information is prepared primarily for the novice. In addition, the section on collection and identification techniques is full of good ideas and instruction, yet again is aimed for beginner audiences.

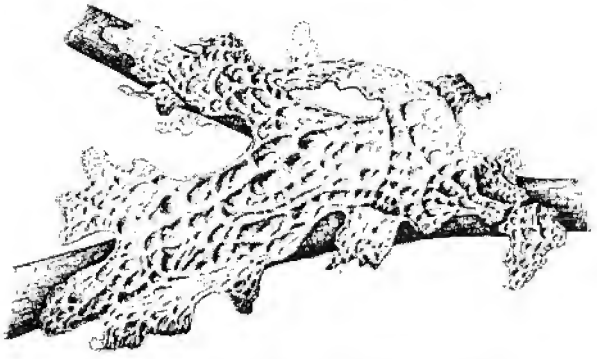
To the delight of every taxonomist, following the background information are 632 pages of identification keys. Those wary of their identification skills, keep in mind that these pages are filled with beautiful color photographs that coincide with most descriptions. These keys and descriptions are based upon 4,000 voucher photographs taken by the Sharnoffs, and supported by voucher specimens deposited at the National Herbarium of Canada in Ottawa. This "flora" contains roughly 1,050 species within Canada and the United States. However, I was shocked to discover that this number represents merely 30% of the known 3,600 known lichen species in North America. I guess we have to start somewhere!

The technical keys were, for the most part, magnificent. The breakdown begins with growth form (i.e. fruticose, foliose, squamulose, or crustose). I found the keys easy to follow (with a cursory brush up on terminology from the glossary), with the exception of the Crustose Key. Crustose lichens comprise a group that has forever been a thorn in the side of all lichenologists, and unfortunately this key does not help much. Far and away, the specific keys are this book's shining stars. They make genera like *Cladonia* (a lichen equivalent to *Senecio*) manageable, and the abundance of photographs prevents you from keying astray.

This book finishes with a classification system (for all of you phylogeneticists!), a complete glossary, a bibliography full of great resources, and an index of vernacular and scientific names (including the authorities). All in all, this book represents a significant contribution to lichenology, and not just for North America. Although its enormity hinders it from serving as an ideal field guide, the information is invaluable. The impeccable quality of the photographs creates spectacular works of art (as I have tried myself and found lichens difficult to photograph). With a price tag as low as $70, it is a book that every lichen lover should own. Yet, even if you have no interest in lichen identification, the sheer beauty of this book can stand alone to be admired on your coffee table.

Copies may be ordered either through Yale University Press at www.yale.com or Amazon.com at www.amazon.com. Prices vary so it may pay to shop around.

Lobaria pulmonaria



www.fs.fed.us/r6/aq/lichen/drawings.htm

Susceptibility of *Linaria* species to snapdragon rust

Snapdragon rust (*Puccinia antirrhini*) is a North American rust that occurs on native species of *Antirrhinum* and *Cordylanthus* in California. It is now widespread on cultivated snapdragon (*Antirrhinum majus),* which is native to Eastern Europe. What are the effects of this New World rust on weeds related to cultivated snapdragon? During August, 2001, urediospores of snapdragon rust were used to inoculate rust-free plants of Dalmatian toadflax (*Linaria dalmatica)* transplanted from Burns, WY, and butter-and-eggs (*Linaria vulgaris*) from the Valley View Nursery of Ashland, OR. Infection occurred on both species of *Linaria*, though the resulting pustules were very small. Rusts have been used as biocontrol agents for other noxious weeds, but these results indicate that *Linaria* species are possible but not congenial hosts, and that *Puccinia antirrhini* is not likely to be effective in controlling weedy *Linaria.* JB

Botanist's Bookshelf

Getting the edge on sedges

"Sedges have edges" is a popular quote used to distinguish sedges from grasses and other grass-like plants, and, indeed, the sharply-angled stems, along with the distinctive flower spikes and dazzling array of bracts make the true sedges (the genus *Carex*) a relatively easy group to recognize.

Distinguishing between the many species is, however, another matter. With 118 of them (some with multiple varieties) in Wyoming, putting names on specimens that somehow worked their way into your plant collection can be a daunting and less than satisfying task. The good news is that there are resources out there "specifically" designed to help you do this.

No question about it, acquiring proficiency at sedge identification takes time and practice, and the tools needed to achieve such proficiency cannot be provided in a short NPS article. The process can speeded up considerably with the help of a well-written and well-illustrated field guide, and some of the "best" (yes, this is subjective) for beginning students are identified below.

The *Field Guide to Iintermountain Sedges* is a nice, almost pocket-size manual, which makes it almost convenient to carry in the field. This book is about as user-friendly as they get, with an illustrated glossary of sedge terminology and complete description of sedge morphology. It also features line drawings for each species, as well as actual photographs displaying critical diagnostic features, complete descriptions, distributions, keys, and comparisons with similar species. How much do you have to pay for a book like this? NOTHING! It can be ordered at no cost through the publications department of the Rocky Mountain Research Station in Fort Collins, Colorado at: 970 498-1392. Ask for:

Publication # RMRS-GTR-10
Field guide to intermountain sedges.

One major limitation to this manual is that it only covers 115 of the most common (plus a few uncommon) species, so some individual specimens are going to fall through the cracks. However, after one acquires the basic skills and vocabulary needed to work with sedges, he/she can then consult a more inclusive state or regional floral manual. For help in gaining such experience, the guide is tough to beat.

The *Field guide to Montana's Wetland Vascular Plants*, with a whole section devoted to sedges, is also nicely illustrated and supportive of the insecure, novice sedge enthusiast. It conveniently separates the species into small groups based on gross morphological features before further keying to species. Each species is accompanied by a line drawing (or drawings) illustrating species characteristics. Although it does not have the extensive descriptions and distributions that the Intermountain guide does, the keys are constructed using as little technical vocabulary as possible, reducing the amount of time spent shifting from key to glossary. And the price can't be beat: FREE! Call either 406 444-6652 or 406 587-6842 to order your copy of:

Lesica, P. and P. Husby. 2001. **Field guide to Montana's wetland vascular plants**. Montana's Wetland Trust, Helena, MT.

Because this publication emphasizes wetland plants, a good many common dryland species are not included. Again, botanists craving a more complete resource will be better served using a technical floral key.

And finally, those of you who are serious about reducing your stress levels should check out Barry Johnston's hot-off-the-press *Field guide to sedge species of the Rocky Mountain Region*. This guide has most of the enticing features that the Intermountain sedges manual does, plus 59 tables outlining differences between similar-appearing species. Best of all, it includes EVERY species known to Wyoming and Colorado, and the western portions of Kansas, Nebraska, and South Dakota. Surely such a publication must be well beyond the financial means of the working man, right? Again, no. This guide is also free, and can be ordered from:

bcjohnston@fs.fed.us
or by calling Dr. Johnston at 970-642-4467

Ask for: **Field Guide to Sedge Species of the Rocky Mountain Region** (available as a book or CD-ROM; Dr. Johnston asks that paper copies be ordered only for actual use in the field, as they cost more to produce and send). The manual is also available on the web at:

http://www.fs.fed.us/r2/gmug/eroom/sedge_guide/index.htm

Although these resources may be tremendously useful for learning the terminology and process associated with identifying sedges, please do not expect them to resolve all of your sedge keying issues, or any other aggravations that life imposes. Only through attention to fine detail and exposure to a large number of specimens can a person achieve the identification skills needed for a desired level of accuracy. A good night's sleep and a positive attitude are also helpful. SM

Columbining Wyoming

By Justen Whittall

Thanks to the generosity of the Wyoming Native Plant Society's 2001 Student Scholarship, I traversed the state pursuing my doctoral research on the North American columbines (*Aquilegia* spp.) In just over a week, I studied six species from the granites of Laramie Peak to the subalpine slopes along the border with Montana, then west to Yellowstone, ending with a tram ride to the top of Rendezvous Mtn., Jackson Hole. With locality data from herbarium specimens and personal contacts within the WNPS, I sought populations in both flower and fruit, taking extensive floral measurements, habitat notes, digital images, pollinator observations, and seed collections.

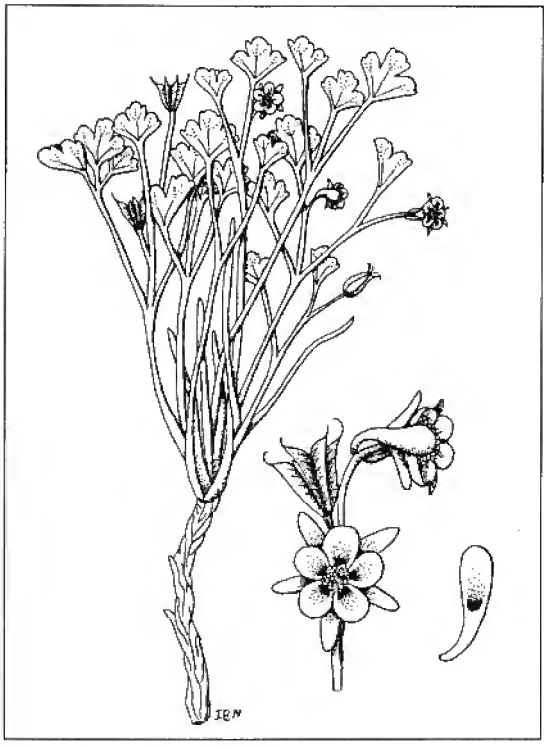
Our first stop was the remote granites of Laramie Peak in search of the Wyoming endemic, *A. laramiensis*. This small white flowered species has short nectar spurs and flowers that hang pendant. After having just seen *A. saximontana* atop Pikes Peak, it was clear that the *A. laramiensis* I found at Friend Creek campground at the base of Laramie Peak is unique. This Wyoming columbine has distinctive white flowers (blue in *A. saximontana*) and a preference for lower elevation granite boulder cracks (*A. saximontana* is found only in the shade of large boulders in steep subalpine talus slopes).

Next, it was on to Yellowstone where I found the golden columbine (*A. flavescens*) along the trail to Elephants Back. Here I observed two bumblebees robbing nectar from the back of the columbine spurs. This method of nectar extraction frequently increases self-pollination by the mechanical manipulations of the bumblebees, but does not promote outcrossing. The most likely visitors, hummingbirds, were not found here.

I then headed north to locate *A. jonesii* near Medicine Wheel on the Montana border, where there is a healthy population of these alpine, mat-forming columbines growing directly out of the exposed talus slopes. The extensive taproots, some greater than 30 cm long, allow the species to survive xeric conditions. I have successfully transplanted *A. jonesii* in the greenhouses at UCSB. In addition, *A. jonesii* seeds were generously provided by Marcel Jouseau, from locations that represent nearly the entire range of the species.

Following a suggestion by Charmaine Delmatier, our last stop in Wyoming was Rendezvous Mtn. near Jackson Hole. After a harrowing tram ride to the top (10,450ft), I was greeted by a colorful purple *Phacelia* and the white bouquets of *A. coerulea* var. *alpina*. This variety differs from the typical in that it is found at higher elevations, has short spurs and shows very little if any pigment in the flowers, and grows on the rocky slopes atop the ski mountain.

The floral measurements I made allow comparison of Wyoming's columbines to the other 20 species found in North America. It appears that the white, pendant, short-spurred flowers are a unique combination of floral traits, suggesting either a new pollination syndrome or a self-pollinating derivative of *A. saximontana*. On the other hand, the mat-habit and deep seed dormancy of *A. jonesii* are novel columbine adaptations to the harsh alpine conditions. I am currently conducting a seed germination study to test this hypothesis.



Above: *Aquilegia laramiensis*
Illustration by Isobel Nichols

Evolutionary relationships between the North American columbines is the subject of my doctoral thesis. I am particularly interested in speciation in the North American columbines and the relative importance of pollinator shifts and habitat differences in generating reproductive isolation between species. Although evolutionary relationships could be estimated from flower shape and colors, these traits are likely under strong selection and may be misleading in trying to reconstruct a genealogy for the columbines. Instead, evolutionary relationships will be estimated by comparing their DNA profiles. This procedure requires fresh leaf material, for which I am currently germinating the seeds I collected this past summer. Anyone interested in seeing images from my Wyoming *Aquilegia* field work and other North American columbines can visit my website at www.lifesci.ucsb.edu/~whittall or contact me directly at whittall@lifesci.ucsb.edu or (805) 893-7814.

Thank you

The 2002 Wyoming Plant Conservation Conference was eventful. The talks and *Artemisia* workshop drew a total of 110 people who pre-registered or registered at the conference. Thanks to everyone who gave presentations and attended. Refunds are available with programs if you were pre-registered but unable to attend.

The Flora of Bighorn Canyon (from p. 1)

The Bighorn River is one of those "misguided Wyoming rivers" that follow ancient routes predating mountain-building events. It is deeply incised into a 900 ft deep canyon with sheer cliffs, flanked on either side by the Bighorn Mountains to the east, and the Pryor Mountains to the west. Altogether, the Bighorn Canyon NRA spans 3600-8040 ft in elevation. Habitat diversity resulting from the range of elevation and topography is exaggerated by climate. Bighorn Canyon NRA has about a three-fold difference in annual precipitation across similar elevations from end-to-end (6.7 inches in Lovell, WY vs. 18.9 inches in Fort Smith, MT). A ring of mountain ranges intercept moisture before it reaches the south end of Bighorn Canyon NRA. Foothills rise above the open plains at the north end to tease rain out of passing clouds. Habitat diversity is further increased by the array of substrates and remaining riverine features.

It is here that Utah juniper (*Juniperus osteosperma*) reaches its northern limits along with a host of other Great Basin species. It joins mountain mahogany (*Cercocarpus ledifolius*) in extensive woodland scrub (Knight et al. 1987). They are dissected by ridgelines and cliffs of Paleozoic marine limestones sparsely-vegetated by cushion-plant communities and species such as Bighorn fleabance (*Erigeron allocotus*). The fractured limestone strata bear springs, seeps, a few coldwater streams and other oases in an arid setting and harbor another regional endemic, Hapeman's sullivantia (*Sullivantia hapemanii*). This species is highly restricted to spring-fed habitat in Bighorn Canyon. It is our only species of *Sullivantia* in the state, distinguished from the *Saxifraga* genus by an open inflorescence with spreading branches, and in having 5 stamens rather than 10. In Bighorn Canyon, it is at its lowest elevations rangewide.

A systematic rare plant survey launched by Walter Fertig and I to document the state and regional endemic plant species took us to some of the far corners of Bighorn Canyon. In addition to surveying the 6 regional endemic species and 19 peripheral species, we vouchered 38 plant taxa and observed others that were not on the original floristic checklist (Heidel and Fertig 2000). Last year we revisited and expanded the original systematic floristic inventory efforts, scouring under-sampled habitats as well as herbarium cabinets to produce a significantly revised and expanded flora of 739 vascular plant taxa (Heidel and Fertig 2002). We also compiled records from the Rocky Mountain Herbarium and Bighorn Canyon Herbarium, representing collections by Robert Dorn (1978), Ernie Nelson (Nelson and Hartman 1984), and by vegetation researchers in Bighorn Canyon NRA (Knight et al. 1987) that were not in the original checklist.

Copies of the current checklist are available from the Wyoming Natural Diversity Database homepage (http://www.uwyo.edu/wyndd; then go to "reports"). Questions, comments or additions are welcome by contacting Bonnie Heidel (bheidel@uwyo.edu; 307-776-3020) or Bighorn Canyon NRA (307-548-2251).

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Lichvar, R.W., E.I. Collins, and D.H. Knight. 1985. Checklist of vascular plants for the Bighorn Canyon National Recreation Area, Wyoming and Montana. Great Basin Naturalist 45(4): 734-746.

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Castilleja Congratulations

The *Castilleja* newsletter paints a colorful picture of botany in Wyoming thanks to its editor of the past 9 years, Walter Fertig. He presented the latest in floristic discoveries and other professional news, and tales of botancial adventures statewide, provided with wit, insight and illustrations, all in a new format and running features. In March, WNPS presented him with a *Castilleja linariifolia* photograph matted and mounted with the *Castilleja* newsletter logo. Just for the records, this is not a "going-away" present but a "staying-on" recognition deserved many times over in the past and in the present. Look for his name in future issues. Congratulations to Walt and Laura on their marriage, new jobs, and new home, from all your Wyoming friends.

"He is happiest who hath power to gather wisdom from a flower." -Mary Howitt

(Found scotchtaped to a file cabinet, left behind in Laramie by Walter Fertig.)

Wyoming Native Plant Society
PO Box 3452
Laramie, WY 82071

The Wyoming Native Plant Society, established in 1981, is a non-profit organization dedicated to encouraging the appreciation and conservation of the native flora and plant communities of Wyoming. The Society promotes education and research on native plants of the state through its newsletter, field trips, and annual student scholarship award. Membership is open to individuals, families, or organizations with an interest in Wyoming's flora. Members receive *Castilleja*, the Society's quarterly newsletter, and may take part in all of the Society's programs and projects, including the annual meeting/field trip held each summer. Dues are $7.50 annually.

To join the Wyoming Native Plant Society, return the membership form below to:

Wyoming Native Plant Society
PO Box 3452
Laramie, WY 82071

Name: _____

Address: _____

_____

___ $7.50 Regular Membership
___ $15.00 Scholarship Supporting Member
($7.50 goes to the annual scholarship fund)